ABSTRACT

Materials for organic electroluminescence devices and organic electroluminescence devices which exhibit high efficiency of light emission and have a long life and excellent heat resistance, novel compounds and processes for producing the materials for organic electroluminescence devices are provided.

The material for organic electroluminescence devices is represented by following general formula [1]:

general formula [1]

$$\begin{pmatrix}
Y^4 \rightarrow X^4 \\
N - A - N
\end{pmatrix}$$

$$\begin{pmatrix}
Y^3 \rightarrow X^3
\end{pmatrix}$$

$$\begin{pmatrix}
Y^2 \leftarrow Y^2
\end{pmatrix}$$

$$\begin{pmatrix}
Y^2 \rightarrow X^3
\end{pmatrix}$$

wherein A represents a substituted or unsubstituted arylene group having 22 to 60 carbon atoms, X¹ to X⁴ each independently represent a substituted or unsubstituted arylene group having 6 to 30 carbon atoms, X¹ and X² may be bonded to each other, X³ and X⁴ may be bonded to each other, Y¹ to Y⁴ each independently represent an organic group represented by general formula [2], a to d each represent an integer of 0 to 2 and, when the arylene group represented by A has 26 or less carbon atoms, a+b+c+d>0 and the arylene group does not contain two or more anthracene nucleus; general formula [2] being:

general formula [2]

$$\begin{array}{c|c}
\begin{pmatrix}
R^{1} & R^{2} \\
 & | & | \\
C & = C
\end{pmatrix}
\begin{array}{c}
R^{3} & R^{4} \\
 & | & | \\
C & = C
\end{array}$$
[2]

wherein R^1 to R^4 each independently represent hydrogen atom, a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 20 carbon atoms, cyano group or form a triple bond by a linkage of R^1 and R^2 or R^3 and R^4 , Z represents a substituted or unsubstituted aryl group having 6 to 20 carbon atoms and n represents 0 or 1.